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PAPER

IN

CHEMISTRY.

CHEMISTRY.

PERSONS employed in performing Chemical Operations, whether on the large ſcale of Buſineſs, or as experiments only, will readily ſee the benefit that muſt accrue to them, from the knowledge of an eaſy, cheap, and expeditious mode of ſtopping any cracks, that happen during a proceſs, in the earthen veſſels employed in ſtrong fires.

The following Paper, which is the reſult of many years experience, and has been confirmed by trials in different

ferent laboratories, will therefore prove highly acceptable to all employed in Chemical purſuits, for the compoſition therein mentioned, has been tried on crucibles employed in melting Metals, and has been found to ſucceed.

The loſſes frequently ſuſtained by workmen, by the cracking of thoſe veſſels while the metals within them are in a fluid ſtate, render the diſcovery of a method of preventing ſuch accidents of great conſequence in many of our valuable manufactures.

The Thanks of the Society were given to Mr. Willis, for the following Letter and Paper on this intereſting ſubject.

GENTLEMEN,

GENTLEMEN,

AS you have long been the patronizers of merit and induſtry; give me leave to offer to your conſiderations, a ſucceſsful method of preventing Stone Retorts from breaking, during any operations in the fire, or ſtopping them inſtantaneouſly when cracked; even in the ſtrongeſt heat.

As I imagine it may be of great utility to ſpeculative, as well as practical Chemiſts; I ſubmit it to your opinion, whether you think it worthy publication.

I am Gentlemen,

Your obedient humble Servant,

THOMAS WILLIS.

Hermitage, Wapping,
April 28, 1785.

CHEMISTRY.

A Method for preventing Stone Retorts from breaking; or ſtopping them when cracked, during any Chemical Operation, without loſing any of the contained Subject.

I Have always found it neceſſary to uſe a previous coating for filling up the interſtices of the earth or ſtone, which is made by diſſolving two ounces of borax in a pint of boiling water, and adding to the ſolution as much ſlaked lime as will make it into a thin paſte; this, with a common painter's bruſh, may be ſpread over ſeveral retorts, which when dry, are then ready for the proper preſerving coating.

The intention of this firſt coating is, that the ſubſtances thus ſpread over, readily vitrifying in the fire, prevent any

any of the diſtilling matters from pervading the Retort, but does in no wiſe prevent it from cracking.

Whenever I want to uſe any of the above coated Retorts; after I have charged them with the ſubſtance, to be diſtilled, I prepare a thin paſte, made with common linſeed oil and ſlacked lime well mixed, and perfectly plaſtic, that it may be eaſily ſpread: with this let the Retorts be covered all over except that part of the neck which is to be inſerted into the receiver, this is readily done with a painter's bruſh; the coating will be ſufficiently dry in a day or two, and they will then be fit for uſe.

With this coating, I have for ſeveral years worked my Stone Retorts, without any danger of their breaking, and have frequently uſe the ſame Retort four or five times; obſerving particularly to coat it over with the laſt mentioned compoſition every time it is charged with freſh materials: Before I made uſe of this expedient, it was an even chance, in conducting operations in ſtone and earthen Retorts, whether they did not crack every time; by which means great loſs has been ſuſtained.

If at any time during the operation, the Retorts ſhould crack; ſpread ſome of the oil compoſition thick on the part, and ſprinkle ſome powder of ſlacked lime on it, and it immediately ſtops the fiſſure and prevents any of the diſtilling matter from pervading; even that ſubtile penetrating ſubſtance the ſolid Phoſphorus will not penetrate through it. It may be applied without any danger, even when the Retort is red hot; and when it is made a little ſtiffer, is more proper for

for luting veſſels than any other I ever have tried; becauſe if properly mixed, it will never crack; nor will it indurate ſo as to endanger the breaking the necks of the Veſſels when taken off.

As the above method of preſerving Retorts may be of ſingular ſervice to philoſophical Chemiſts, as well as thoſe who practice the ſcience for commercial purpoſes; it is my wiſh it ſhould be generally known; as many curious operations may be carried on with greater ſafety, and at an eaſier expence. I have communicated it to the Duke de Chaulnes, who no doubt will make it known to the French Chemiſts; and ſhall be happy to hear of its being of advantage to a ſcience ſo much cultivated in the preſent age.